Supplementary Table 1. Summary statistics of predictor variables.

Variable	Unit	Minimum	1st quartile	Median	3rd quartile	Maximum	Mean	Standard deviation
NO_2 concentration	$\mu g/m^3$	0.3	3.3	5.3	6.5	16	5.26	3.19
INV_NEARROAD	m	0.001	0.01	0.04	0.075	3.04	0.23	0.68
INV_NEARPAVED	m	0.00032	0.00165	0.0034	0.0089	0.23	0.016	0.04
INV_NEARFEEDER	m	0.00059	0.01	0.03	0.065	3.04	0.22	0.68
ROADBUF50	m	0.00	0.00	98.41	161.93	210.81	97.15	74.92
ROADBUF100	m	0.00	179.70	326.66	560.3	934.35	361.73	259.33
ROADBUF150	m	0.00	297.80	580.10	1096.0	1870.66	743.63	536.40
ROADBUF200	m	0.00	478.80	1143.65	1904.8	3219.14	1271.80	918.36
FEDBUF50	m	0.00	0.00	94.36	135.73	210.81	82.52	67.19
FEDBUF100	m	0.00	147.00	326.66	449.6	934.35	314.62	226.10
FEDBUF150	m	0.00	292.50	580.10	902.1	1621.92	661.00	475.67
FEDBUF200	m	0.00	396.70	1054.92	1590.8	2914.39	1143.54	824.61
PAVBUF50	m	0.00	0.00	0.00	0.00	144.22	15.04	35.47
PAVBUF100	m	0.00	0.00	0.00	44.04	405.36	48.12	92.42
PAVBUF150	m	0.00	0.00	0.00	170.82	619.11	83.16	148.01
PAVBUF200	m	0.00	0.0	0.00	274.9	824.37	129.41	205.05
BARE100	m^2	0.00	104.2	1387.70	4949.5	24,567.16	3765.39	5442.85
BARE300	m^2	0.00	5808	21,952.04	47,050	187,851.79	32,189.74	38,091.84
BARE500	m^2	3081.63	25,867	56,214.91	132,046	425,778.22	86,447.27	86,477.94
BARE1000	m^2	39,935.51	20,1534	28,8369.82	435,804	1,012,517.65	345,570.67	220,567.37
VEG100	m^2	0.00	129.7	1219.38	3329.6	11,884.91	2413.63	3039.26
VEG300	m^2	0.00	5714	18,268.51	31,733	89,558.77	22,794.27	22,542.87
VEG500	m^2	5134.28	23,121	47,699.91	83,560	194,632.05	59,936.30	44,007.15
VEG1000	m^2	32,320.33	164,703	218,580.63	275,066	483,835.11	225,823.65	90,707.17
FARM100	m^2	0.00	0.000	0.00	0.000	25.00	0.64	4.00
FARM300	m^2	0.00	0.0	0.00	0.0	2,764.62	114.59	468.37
FARM500	m^2	0.00	0	0.00	75	4275.00	267.97	737.02
FARM1000	m^2	0.00	25.0	381.47	1483.5	134,159.12	4660.51	21,403.90
FLD100	m^2	0.00	19.11	189.04	662.13	18,744.61	905.92	2985.99
FLD300	m^2	0.00	1971	4521.50	7474	139,683.60	9115.43	22,260.78
FLD500	m^2	1209.82	10,267	15,993.61	24,420	355,773.85	32,675.40	60,534.34

FLD1000	m^2	15,105.50	70,423	87,642.07	179,274	1,128,032.4	174,513.01	211,741.68
SETH100	m^2	0.00	0.0	135.33	733.4	11,365.10	1082.88	2463.89
SETH300	m^2	0.00	347.5	2025.10	6840.7	66,676.07	8642.28	16,052.86
SETH500	m^2	100.00	2368	8507.03	27,577	118,665.21	23,071.23	33,199.10
SETH1000	m^2	300.00	17,287	43,574.98	121,228	209,211.64	73,010.25	69,953.02
SETL100	m^2	0.00	434.9	1404.08	4546.4	9897.68	2901.12	3320.31
SETL300	m^2	0.00	7285	24,837.94	42,827	81,303.64	27,607.77	23,449.43
SETL500	m^2	7258.47	27,784.00	76,183.00	105,773	150,863.39	70,989.98	45,940.33
SETL1000	m^2	50,291.62	19,3598.00	271,910.11	303,713	375,989.82	250,845.33	82,366.15
PAS100	m^2	0.00	44.84	841.18	1956.39	8389.70	1552.85	2001.39
PAS300	m^2	0.00	5172.00	13,269.81	26,075	60,410.04	18,094.81	16,997.56
PAS500	m^2	6374.37	24,570.00	45,820.44	64,759	195,785.92	54,708.38	44,876.92
PAS1000	m^2	77,487.79	138,330.00	220,985.50	355,117	669,322.25	261,982.94	163,556.23
RIL100	m^2	0.00	73.86	11,18.62	6505.15	20,415.23	4160.10	5794.22
RIL300	m^2	0.00	2927.00	27,064.67	59,250	161,174.15	40,974.14	48,363.66
RIL500	m^2	1199.02	17,618.00	73,421.33	188,262	460,638	115,425.23	126,023.69
RIL1000	m^2	44,639.78	140,200.00	391,764.15	835,980	1634,827.5	558,014.36	473,844.14
SAND100	m^2	0.00	0.00	49.60	429.9	9770.57	1025.20	2333.53
SAND300	m^2	0.00	92.16	995.88	11,689.98	70,021.32	10,998.39	20,123.82
SAND500	m^2	0.00	1969.00	6424.27	28,295	271,856.45	33,151.06	59,982.08
SAND1000	m^2	1099.99	19,913.00	51,949.93	163,699	874,651.70	147,690.63	210,881.94
THO100	m^2	0.00	82.78	678.95	2425.16	12,862.13	1705.69	2574.58
THO300	m^2	0.00	8090.00	13,547.95	26,192	61,684.45	18,072.04	15,978.46
THO500	m^2	6115.57	31,777.00	52,749.82	86,688	15,7872.16	60,951.26	39,530.45
THO1000	m^2	51,639.02	213,970.00	252,044.96	300,718	506,550.40	259,848.9	89,091.04
WAT100	m^2	0.00	0.00	0.00	0.00	7145.27	183.21	1144.16
WAT300	m^2	0.00	0.00	0.00	0.00	111,916.47	6410.64	22,976.28
WAT500	m^2	0.00	0.00	0.00	0.00	256,703.58	22,238.24	63,622.67
WAT1000	m^2	0.00	0.00	1848.35	17,1046	551,617.50	113,596.76	186,528.42
POP_200	Person/grid*	0.00	53	101	283	1042	202	228
POP_400	Person/grid*	0.00	163	422	1,299	4,225	778.00	865
POP_600	Person/grid*	0.00	479	916.00	2424	6868	1596	1632
POP_800	Person/grid*	0.00	935	1735	4697	9608	2693	2407
POP_1000	Person/grid*	0.00	1315	2324	6562	12,664	3878	3383

ALTITUDE	m	12.00	14.00	16.00	21.00	32.00	17.26	4.07

*Respective grid size.

Supplementary Table 2. Land use/land cover classes.

LULC class	Description	Variable name
High settlements	A type of land where large number of population live predominantly and the land is occupied by residential, commercial, industrial and other human related activities	SETH
Low settlements	A type of land where average number of people live and the land is moderately occupied by residential, commercial industrial and other human related activities	SETL
Thoroughfare/track	Any form of on land route connecting one location to the other. It includes (trails, improved earth roads, feeder roads, paved roads and the non functional airfield)	THO
Water body	A land covered with flowing water mainly river and streams	WAT
Farm land	A land devoted for agriculture primarily for crop cultivation purposes	FARM
Dense vegetation	A land cover which mainly includes urban vegetation, tree canopies and scrubs	VEG
Pasture	A land with grasses, shrubs and desert plants mainly used for herding animals and other agricultural activities	PAS
Barren land/sand	Bare land predominantly sand and rock which could also be a result of transitional activities other than natural bareness	BAR
Fluvial	A land form near a river or a stream which extends from the banks of water channel to the base of the enclosing ground walls. It could also be formed as a result of over flooding	FLD
Rill/gully	Bare land that is created by erosion	RIL
Spares vegetation/dunes	A land that is characterized by very scares natural vegetation. Sandy hill is predominantly created by wind or water flow	SAN

LULC, land use/land cover.